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Subject Response to EPA Comments to the Draft SSD Work Plan

History: This message has been forwarded.

Hi Chris - CDM is providing the attached Response to Comments (RTC) to the Draft SSD Work Plan, on behalf of OPOG. The RTC is provided in both Word and pdf file format. Please let me know if you have difficulty opening the attached.

Regards, Sharon



RTC_to_EPA_May9_05.pdf RTC_to_EPA_May9_05.doc



Memorandum

To: Chris Lichens, USEPA

From: Dave Chamberlin and John Eisenbeis, CDM

Date: May 9, 2005

Subject: Response to Comments on Omega SSD Testing Work Plan

On behalf of the Omega Chemical Site PRP Organized Group (OPOG), presented below are CDM's responses to comments transmitted by EPA on April 18, 2005 on the February 24 Sub Slab Depressurization (SSD) Work Plan. Our responses provide a commitment to fully incorporate specific EPA comments, or clarify the current text. We are progressing with addressing your comments, and expect to submit the revised document on schedule by May 18, 2005. Please note that, per prior agreement with EPA, our submittal is a contingent work plan, and would only be implemented if ongoing efforts for direct access control are not successful. EPA comments are indicated by italics, with responses indicated by plain text.

General Comments

1. *Handling of extracted air from beneath the slab inside the building should be discussed. Depending on the duration of extraction testing and the concentration of contaminants in the vapors, indoor air quality could be affected. Extracted vapor should be vented to the outside if allowed by permitting agencies.*

Response: We appreciate EPA's suggestion of venting extracted vapor to the outside air, likely under a permit with the South Coast Air Quality Management District (AQMD). This will likely be a more cost effective means of addressing the vapors than potential treatment options, and we will commence acquisition of AQMD's approval.

We will coordinate with the operator so that testing activities occur during a time when the facility is closed for the day, and if possible, is also closed one day following the testing.

2. *The field data should be recorded and reported as well as "results" data. The field*

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procedure data should be comprehensive and complete. All procedural information identified in Attachment A should be included in the report; for example, the time elapsed for the pressure field to achieve steady state (e.g., increasing time periods for more distant pressure holes, etc.) should be reported.

Response: Text will be added to Section 4.2 to state that the requested information will be included in the reporting.

3. *The work plan addendum should include at least one or two tests at greater depths than 3 to 5 feet below the floor. The existing slab may be situated on shallow engineered fill that may vary with regard to relative compaction and overall soil characteristics (e.g., compacted soil, gravel, etc.) compared to the native soils below. It would also be worthwhile to check extraction flow rates and vapor characteristics at a depth closer to where future extraction lines may be installed.*

Response: A sub-slab system targets vapor extraction from the material immediately beneath the building foundation – as opposed to the native soils that are present at greater depths. Furthermore, the effectiveness of the SSD system will be significantly more influenced by the materials directly beneath the slab, rather than the underlying deeper native soils. For these reasons, permeability testing within native soils would not provide information that supports the objectives of the testing.

4. *Table 3-1 should show criteria for the achievement of steady state pressure equalization (e.g., fractional changes between successive readings).*

Response: Text will be added to Section 2.1 and 2.2 to state that steady state conditions will be defined as < 0.1 inch of water change between successive pressure readings taken 30 minutes apart.

5. *OPOG should be aware of the document titled "Guidance For The Evaluation And Mitigation of Subsurface Vapor Intrusion To Indoor Air, Department of Toxic Substances Control, California Environmental Protection Agency," December 15, 2005 (Revised February 7, 2005). This document contains comprehensive descriptions of certain procedures such as initial system purging and leak testing that are not currently addressed in the work plan addendum. The Cal-EPA document can be used or incorporated by reference as appropriate.*

Response: The referenced guidance document will be added to the Work Plan's reference list.

Specific Comments

6. Section 1.1, Scope of Work: *The basis of evaluating the feasibility of SSD should be clarified; i.e., what are the criteria for determining feasibility?*

Response: The text in Section 1.1 will be modified to specifically state that the described investigation will evaluate SSD feasibility with regard to sub-slab permeability; however, CDM believes that it would be more appropriate to evaluate SSD feasibility after the data have been collected than establish evaluation criteria before that time.

7. Section 2.1, Investigating Sub-Slab Conditions: *A fourth set of test holes should be placed in a location described as the bottom right hand corner of Figure 2-1. This will provide more complete coverage of the site.*

Response: CDM believes that data from the three proposed testing areas will adequately characterize the sub-slab material permeability. In addition, OPOG is obligated to minimize the impact of testing to the Skateland building floor and minimize disruption to Skateland activities. However, if the data from the three test locations are highly variable and do not form a sound technical basis for SSD design, then an additional test at an additional location may be warranted. In this scenario, the additional test would only be performed after receiving EPA approval.

8. Section 2.1.4, Investigating Sub Slab Conditions: *The stated procedure involves drilling pressure measurement holes at four specified distances from each suction hole. The hole placement is shown in Figure 2-1. This figure shows that essentially all the pressure monitoring holes are on one side of each suction hole. Additional pressure measurement holes should be provided to comply with the criteria stated under EPA's Procedure Item 2.b. which states that "Sample holes should be located in two or three directions from each suction test hole."*

Accordingly, an equal number of pressure monitoring holes should be installed on each side of each suction hole. Ideally, these pressure holes would be installed radially at specified distances from the center of each suction hole. Although this is impractical to do for the upper right corner location shown in Figure 2-1 (inside the skating rink), it is possible to install pressure test holes in a radial fashion around the two suction holes on the left side of Figure 2-1, at least to a partial extent. Similarly, pressure test holes could be placed along the "x-y" axis of the proposed suction hole at the bottom right corner of Figure 2-1 (see comment 7).

Additional pressure test holes should be installed along the full longitudinal axis of the suction hole located in the upper right hand corner of Figure 2-1. To the extent practical, radial spacing of pressure test holes should occur at varying distances from each suction hole as described in Appendix A.

Response: In agreement with the referenced guidance, the original Figure 2-1 shows that pressure measurement holes were proposed at all three test locations in two directions from each suction hole. OPOG is obligated to minimize the impact of testing to the Skateland building floor and minimize disruption to Skateland activities; however, three additional pressure measurement holes will be added (one per test location) and will be shown on a modified Figure 2-1.

9. Section 2.2.4, Testing SSD: *In addition to test PID readings, a summa canister sample should be collected at the end of the test (see comment 11).*

Response: While it may be true that a second round of samples will show different contaminant concentrations, these additional results will not provide information that will be helpful in evaluating SSD feasibility or design. PID readings before and after testing at each hole will be used to determine how the total VOC concentrations changed over the period of evaluation.

10. Section 2.1.3, Investigating Sub Slab Conditions: *The work plan states that a summa canister grab sample of sub slab vapors will be taken from each suction hole. Appendix A states that sub-slab gas samples should be taken as described in the "radon sniff test." This reference should be included in the attachment to the work plan.*

Response: The radon sniff test is not applicable to the testing described in the Work Plan. That test relates to using scintillation cells to collect samples for detection of radon gas. The sampling method for sub-slab vapors is described in Section 3.

11. Section 3.2.1, Vapor Sampling: This section states that one sample will be collected from each suction hole. Section 2.2.3 states that a summa canister grab sample will be collected immediately after the suction hole is installed. This stagnant sample may not be representative. Additional summa canister samples should be collected toward the end of the vapor extraction testing.

Response: See response to Comment 9.

12. Section 3.2.1, Vapor Sampling: The specified pressure gage range of 0 to 50 inches of water is too large. It would be more appropriate to use pressure gages with a smaller range since the maximum expected gage pressure is only about -5 inches of water column. Similarly, the specified air flow meter range (0 to 125 standard cubic feet per minute) is too large for the expected vapor extraction flow rates through small diameter holes at low gage pressure. Instrumentation with more suitable measurement ranges will provide better data.

Response: The text will be modified to state that the ranges of the flow meter and pressure gage will be 0-25 scfm and 0-2 inches of water, respectively.

13. Section 3.2.2 Barometric Pressure Measurement: In addition to outdoor pressure measurement (validated with a nearby weather station), the field data should include pressure readings inside the building and the status of the building HVAC system during each reading.

Response: The text in Section 3.2.2 will be modified to address this comment.

14. Section 4 Analysis and Interpretation of Test Results: Diagnostic log-log plots of pressure normalized by the suction hole pressure, versus observation distance should be presented. Such plots allow comparison of data from all tests and can indicate the variability of subsurface materials, monitoring probe seal leaks, etc.

Response: The text in Section 4 will be modified to address this comment.

15. Section 5.5, Schedule: The schedule of field activities should show the estimated durations of major tasks (e.g., the estimated test duration).

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Response: Section 5.5 will include text that states the duration of the testing.